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*Has received an application for a patent  
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as provided by law.*

*Bence Lehman*

Commissioner of Patents and Trademarks

*Janet A. Morton*  
Attest



US005458483A

United States Patent [19]

[11] Patent Number: 5,458,483

Taylor

[45] Date of Patent: Oct. 17, 1995

[54] OXYGEN-FUEL BURNER WITH INTEGRAL STAGED OXYGEN SUPPLY

5,092,760 3/1992 Brown et al.  
5,269,679 12/1993 Syska et al.

## OTHER PUBLICATIONS

*North American Combustion Handbook*, A Basic Reference on the Art and Science of Industrial Heating with Gaseous and Liquid Fuels, vol. 1: Combustion, Fuels, Stoichiometry, Heat Transfer, Fluid Flow, Third Edition, "Oxygen Enrichment", pp. 76-79.

*Combustion Technology Manual*, Fourth Edition, 1988, "Oxygen-Enriched and Oxy-Fuel Combustion", pp. 316-327.

Primary Examiner—Larry Jones  
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[73] Assignee: Maxon Corporation, Muncie, Ind.

[21] Appl. No.: 163,424

[22] Filed: Dec. 8, 1993

## Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 92,008, Jul. 15, 1993, Pat. No. 5,431,559.

[51] Int. Cl.<sup>5</sup> ..... F23M 9/00[52] U.S. Cl. .... 431/350; 431/9; 431/115;  
431/351[58] Field of Search ..... 431/350, 9, 115,  
431/190, 183, 351, 353

[56] References Cited

## U.S. PATENT DOCUMENTS

4,690,635 9/1987 Coppin  
4,986,748 1/1991 Brown et al.

## [57] ABSTRACT

A burner assembly is provided for combining oxygen and fuel to produce a flame. The burner assembly includes a burner block formed to include a flame chamber having inlet and outlet openings, a bypass structure for conducting oxygen outside of the flame chamber to the outlet opening of the flame chamber and structure for discharging fuel into the flame chamber formed in the burner block.

68 Claims, 5 Drawing Sheets

